



THE BEAN BAG

A newsletter to promote communication among research scientists concerned with the systematics of the Leguminosae/Fabaceae.

Number 21

May 1985

From the Editors

Lydia Poole, who has worked with CRG for eight years, has accepted a transfer to the Field Crops Laboratory. She will be working with Jim Elgin, a Bean Bag Reader. We are certain that you will join us in wishing her well and in expressing appreciation for typing the Bean Bag for the past three years. Please address all correspondence to the Bean Bag at the address listed below.

The Bean Bag (BB) is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal the BB is issued in May and November of each year and features six columns: From the Editors, News (meetings, major events, announcements, etc.), Corrections for last Directory, New Readers, Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to BB Readers. Recent is defined as one year old. We rarely will publish a citation that is more than one year old. Specific interest to BB Readers is defined as research papers of interest to a world wide group of legume systematic botanists.

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Beltsville, MD 20705 USA.

SECOND INTERNATIONAL LEGUME CONFERENCE

The Conference, entitled Biology of the Leguminosae, will be held on 23-27 June 1986 at the Missouri Botanical Garden, St. Louis, Missouri, USA. The aim of the meeting is to discuss recent advances in our understanding of the biology of legumes, gained from both field and experimental research, and covering both pure and applied points of view. The multidisciplinary approach of this conference is designed to address a wide variety of research interests and to stimulate discussion among specialists. Scheduled topics include: Life history studies; tree architecture; evolution and biology of inflorescences and pollen; floral organogenesis; ecology; ecological biogeography; pollen-stigma-style interactions; structure and function of legume fruits and seeds; mycorrhizal relationships; cyanogenesis; evolution of symbiotic genes; biological implications of genome evolution; ant-domatia, aphid-legume, tick-legume, and bruchid-legume co-evolution; biological changes induced by domestication, computerized data bases and biological research; and international legume data bases. For further information write to: Dr. James L. Zarucchi, Legume Conference Coordinator, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166, USA.

ADVANCES IN LEGUME SYSTEMATICS - PART 3 by C. H. Stirton

Since the publication of *Advances in Legume Systematics*, Parts 1 & 2, in 1981, a great deal of factual information and many new ideas have accumulated. While some of these are appropriate for the proceedings of the International Conference to be held at the Missouri Botanical Garden in 1986, *Advances in Legume Biology*, much of it also forms a natural extension to the review papers published in *Advances in Legume Systematics*, Parts 1 & 2. Kew has offered to continue that work as a serial publication produced at irregular intervals. Part 3 of *Advances in Legume Systematics* is scheduled for publication in time for the next Legume Conference.

If you wish to submit a review paper please contact the Editor as soon as possible. He will advise whether your contribution is suitable for the series and will send you author's instructions. Please note that the strict deadline for manuscripts is 1 August 1985.

For further information please contact Mr. C.H. Stirton, Editor, *Advances in Legume Systematics*, Part 3, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, England.

LEGUME GENUS SURVEY

GUNN is preparing an electronic version of his recently published USDA Technical Bulletin 1680, *A NOMENCLATOR OF LEGUME (FABACAEAE) GENERA*. If you have published a new legume name or changed the synonymy or distribution of an extant legume genus since 1980, please airmail a reprint or reference to GUNN at address of first page of the BB. If you are planning to do any of the above, please advise GUNN, and send reprint when article is printed.

FORESTRY SCHOOL, THE ANDES UNIVERSITY

RODRIGUEZ-CARRASQUERO (new Reader) noted that the Forestry School has facilities for visiting botanists. Those who wish to use the facility may write in advance.

ICRAF

The International Council for Research in agroforestry was established by charter in 1978, following an initiative by the International Development Co-operation and the Canadian International Development Agency (CIDA) as the initial co-sponsors. ICRAF set up its headquarters in Nairobi in 1978, under an agreement with the Government of Kenya. ICRAF is an autonomous, non-profit international council governed by a Board of Trustees with equal representation from developed and developing countries. With the exception of a representative of the host country, Kenya, trustees do not represent countries or organizations but are elected on individual merit.

The objects of the Council are to increase the social, economic and nutritional well-being of peoples of developing countries through the promotion of agroforestry systems designed to achieve better land use without detriment to the environment, to encourage and support research and training relevant to agroforestry systems, to facilitate the collection and dissemination of information relevant to such systems and to assist in the international co-ordination of agroforestry development.

For additional information write to: Bruce House, Standard Street, P.O. Box 30677, Nairobi, Kenya.

INTERNATIONAL ORGANIZATION OF PLANT BIOSYSTEMATISTS

The Executive and Council of the International Organization of Plant Biosystematists (IOPB) will meet during the Third International Congress of Systematics and Evolutionary Biology, University of Sussex, Brighton, U.K., 4-10 July 1985. Anyone wishing to place an item on the agenda for discussion should write to Dr. Liv Borgen, Secretary, IOPB, Botanical Garden and Museum, Trondheimsveien 23B, N-OSLO 5, NORWAY.

IOPB is holding a Symposium "Differentiation Patterns in Higher Plants," Zurich, Switzerland, July 13-18, 1986. Information on participation may be obtained from the Chairperson, Dr. Krystyna Urbanska, Geobotanisches Institut, ETH, Stiftung Rubel, Zurichbergstrasse 38, CH-8044 ZURICH, SWITZERLAND.

IOPB publishes the IOPB NEWSLETTER. Information for the IOPB NEWSLETTER may be sent to the Editor, Dr. Krystyna Urbanska, address above.

Application forms for membership in IOPB may be obtained from the President of IOPB, Dr. William F. Grant, Department of Plant Science, P.O. Box 282, Macdonald College of McGill University, Ste. Anne de Bellevue, Quebec, Canada H9X 1C0, or by sending US \$25 (for the period 1983-1987) directly to the Secretary-Treasurer of IOPB, Dr. Liv Borgen, address above.

NEW READERS
(Included in 1985 Directory)

ANDERSON, Dr. Gregory J.; BAWA, Dr. Kamaljit S.; BLEILER, John; CORDEIRO, Lazara; DEBOUCK, Dr. Daniel G.; DORADO, Oscar; GANESHAIAH, Dr. K. N.; GUEVARA, Lourdes C.; HANNON, Dylan; HUXLEY, Dr. Peter; IICA, Orton Memorial Library; LAVIN, Matt; OKOLO, Michael; ONIPKO, Tamara N.; PILLAY, Mr. Michael; REUTERIA, Enrique; RODRIGUEZ-CARRASQUERO, Prof. Henry A. RODRIGUEZ-CARRASQUERO; SINGAL, Dr. Shiv Kumar; SUMMERFIELD, Dr. R. J.; STUDART DA FORESCA VAZ, Angela M.; WOODS, Mr. Michael.

GLEANINGS

ALBUQUERQUE (note corrected address) has as a thesis problem germination of seeds (many legume seeds) Needs data on seed identification and germination. Has data on legumes of Amazonia. [Ed. note: Thank you for your good wishes.]

ANDERSON, G. (new Reader) is studying systematics and reproductive biology of *Apios americana* and needs seeds and tubers of any *Apios* spp. Offers tubers of *A. americana* [Ed. note: Send your request to WHITE.]

BIRCH (new address) needs small untreated seed samples of wild and cultivated species of *Phaseolus* and *Vigna* and offers the same.

BISBY. See ZARUCCHI.

BENEPAL is evaluating soybean germplasm for stress tolerance and biological efficiency.

BRAVO has started a study of *Cassia* for Flora of Chaco (Argentina).

BRENEAU (new Reader) is studying *Apios*: Cytogeography, biosystematics, and reproductive and pollination biology. Needs tubers and seeds of populations outside of New England and seeds of Asian species. Offers herbarium specimens of *A. americana* from northeastern USA.

CANE is studying the pollination ecology and solitary bee management for pollination of *Lespedeza cuneata*.

CORDEIRO has concluded Ph.D. research and starting on a study of nodulation patterns in "cerrado" legumes. Has two papers in press on nodulation work. Needs seeds of South American Tephrosiaceae (Millettiaceae) and Dalbergiaceae for nodulation study starting January 1986 with SPRENT.

DEBOUCK has returned to Colombia from Gembloux, where he worked with MARECHAL, to collect edible native pulses and their wild relatives in Central and South America. Will exchange seed material and data.

DORADO (new Reader) completed a study of the Mimosoideae of Morelos, Mexico and is revising *Brongniartia*. Needs South American spp. of *Brongniartia*.

FORERO reports that the multidisciplinary Calliandra project is alive and well. Hector Hernandez (MO) floral biology, phenology, chromosome numbers, mainly Series Laetevirentes. John Romeo, University of South Florida, chemistry of leaves and seeds. GUINET, Montpellier, France, pollen. Marcela Ataíde, Recife, Brazil, Brazilian species. FORERO, South American species as a whole. A joint field trip by FORERO, Romeo, Ataíde and Hernandez is scheduled for early 1985 in northeastern Brazil. The following items are needed: Seeds (15-20) for Hernandez, and (one to a few pounds) for Romeo; leaves (a couple of leaves or even a few leaflets) for Romeo; herbarium specimens for identification to FORERO and/or Hernandez; anthers for GUINET.

GANESHAIAH (new Reader) offers early maturing photosensitive cultivars of Lablab purpurea and Dolichos biflorus.

GEESINK. See VIDAL.

GILL is evaluating seedlings of selected legumes and needs seeds of tropical tree legumes.

GOMEZ-SOSA needs legumes of Chile, Bolivia, and Peru, especially Astragalus. Offers Argentina legumes.

GRANT has LOTUS NEWSLETTER Number 15, 1984 available for distribution at \$5.00 (US).

GUINET. See FORERO.

GUNN is completing an electronic updated version of TB 1680 (A Nomenclator of Legume (Fabaceae) Genera). Five or six copies will be made available during the summer of 1985 to BB Readers who will be willing to review the typescript prior to its electronic distribution. Work is being done on the Laboratory's WANG computer. This version also will include habit and leaf data and habit and leaf data sorts. R. J. Delorit (Vice Chancellor, University of Wisconsin, River Falls) and GUNN have completed the first draft of a typescript illustrating by color photographs seeds of all legume genera (native or naturalized) found in continental United States and representatives of all legume tribes and subtribes of Phaseoleae not represented in United States. This typescript will be published as a book during late 1986 or early 1987. A second draft typescript of a study of caesalpinoid fruit-seed morphology will be ready for reviewers within the year.

HERNANDEZ needs seed samples of any Calliandra species for chromosome and morphology studies. Will identify Calliandra from Mexico and Central America.

HANNON (new Reader) for horticultural study needs seeds of Apios spp., Bathiaea spp., Delonix baccal, D. elata, Elizabetha spp., Inga lancaefolia, I. pulcherriflora, Lupinus spp. of South America, L. villosus, and Tephrosia lupinifolium. Offers loan of Dolichos sieneri, material of Delonix adansonoides (vegetative) and in the future field notes on legumes of San Diego County, California.

HUGHES continues to collect *Gliricidia sepium* germplasm throughout tropical America. Needs seeds of *Gliricidia* from any source. Offers seeds of economically important tree legumes from Central America.

HUXLEY (new Reader) is editing Research Methodology for the Exploration and Assessment of Multipurpose Trees. This will be a set of source materials in 24 parts which is ongoing and covers aspects for "fast-growing nitrogen-fixing trees." Needs brief descriptions of experimental techniques of assessments, field layout, etc. for research with woody plants. Offers ICRAF publications.

KINGSOLVER has started studies of North America species of *Merobruchus* and species of *Algarobius*. Needs any Bruchidae emerging from seeds of *Acacia*, *Albizia*, *Lysiloma*, *Parkia*, and *Pithecellobium* of Mexico and Central and South America.

KRETSCHMER is conducting an agronomic evaluation of 254 *Desmodium barbatum* accessions and 228 *Macroptilium atropurpureum* accessions. Needs seeds of African species of *Aeschynomene* and *Lotononis*. Offers seeds of many accessions of tropical forage legumes.

LAVIN (new Reader) needs seeds of *Robinieae* and offers seeds of *Robinieae* and will identify *Coursetia*, *Cracca*, etc.

MARECHAL. See DeBOUCK.

MESQUITA has described a new species of *Enterolobium* and needs seeds of all species of *Enterolobium*.

MISSET is using biochemical techniques (SDS-PAGE, isozymes, etc.) to determine possible hybrids among *Ulex* spp. of Brittany.

MOHLENBROCK. See WOODS.

NOZZOLILLO is studying anthocyanins other than flavonoids in *Lens*.

OHASHI. See VIDAL.

OKOLO (new Reader) is studying the pollen of legumes from southern Nigeria. Needs pollen materials.

ONIPKO (new Reader) is studying section *Cicerula* of *Lathyrus*, needs *Lathyrus* research material, and offers material in exchange.

OSMAN is studying seed production of low growing *Leucaena leucocephala*. Needs seeds of dwarf or low growing races and seeds of any fast growing woody legumes. Offers seeds of giant and common types of *L. diversifolia* cv. 'K156', *L. leucocephala*, and *Calliandra calothyrsus*.

PALACIOS is studying *Prosopis* for "Flora del Paraguay". Needs vouchers of *Macroptilium heterophyllum* from Mexico and USA. Offers vouchers of *Macroptilium* from Argentina.

PILLAY (new Reader) is studying cytogenetics of *Lotononis bainesii* cv. 'Miles'. Needs articles on legume genetics.

PRATT and others have a paper in press on hybrids of *Phaseolus vulgaris* x *acutifolius*. Has started study with R. Shade and L. Murdock (both of Entomology Department, Purdue University) of plant resistance to cowpea and common bean bruchid beetles. Needs black beans (*P. vulgaris*) from Parramos, Depart. of Chimaltenango, Guatemala and any *P. vulgaris* with resistance to bean bruchid (*Acanthocelides obtectus*). Offers accessions of *P. acutifolius*.

RAINA is improving *Vigna aconitifolia* and needs seeds of various species of *Vigna*.

RORIQUEZ-CARRASQUERO (new Reader) has published subfamily Papilionoideae in FLORA DEL ESTADO MERIDA and Caesalpinioideae in FLORA DE LOS ANDES DE VENEZUELA. Is working on remainder of Leguminosae for FLORA DE LOS ANDES DE VENEZUELA and with R. D. Luis on *Lupinus* spp. of Venezuela.

RODIGUEZ PEREZ and Duarte Miwaguez are studying effect of water salinity on germination of tepary seeds. Needs seeds of *Prosopis alba*, *P. tamarugo*, and *Acacia victoriae*. Offers seeds of *Cassia sturtii* and *Phaseolus acutifolius* var. *latifolius*.

SCHRODER needs seeds of any species of *Leucaena*.

SHAWE has started his dissertation study of *Peltophorum* group (Caesalpinieae). Plans field trip to east coast of Brazil from Dec. 1985 to Feb. 1986. Needs material of *Batsia* and *Moldenhauera*, and would be grateful for any fruits, seeds, or fresh material from Botanic Gardens. Offers data on leaf anatomy and micromorphology gathered during initial survey of group. Is keen to identify material of this group and plans to establish and exchange after collecting trip.

SINGAL (new Reader), studying insect pests of stored grains and stored products, needs bruchids (Coleoptera: Bruchidae) other than from India. Offers Indian bruchid specimens.

SPRENT. See CORDEIRO.

STIRTON needs young leaves in FAA and seeds of South America species of Sophoreae. Will identify South American Sophoreae.

TINDALE has started a study of the "pseudoraceme" and "fascicles" inflorescence development in Phaseoleae, Psoraleae, Tephrosieae. Needs developmental stages of inflorescences (from earliest appearance through open flowers) of *Dioclea*, *Lonchocarpus*, and *Erythrina laurifolia* pickled in FAA.

TURNER (new Reader) has completed M.S. thesis: "Secretory cavities of Amorpheae and Psoraleae (Leguminosae: Papilionoideae): Anatomy, development, distribution, and significance for tribal relationship."

ULIBARRI is working with types and synonyms of *Adesmia inflexa*; species of series *Microphyllae*, *Adesmia*; and *Caesalpinia* of South America. Needs *Caesalpinia* and *Hoffmannseggia* plants.

VAN DER MAESEN is revising *Dunbaria* and *Flemingia*. Needs herbarium specimens of cultivated legumes and near relatives offers African legume herbarium specimens.

VIDAL continues with a revision of the papilionoid legumes for the Flore du Cambodge-Laos-Vietnam: *Uraria* by Mrs. Dy Phon, *Tephrosieae* (*Millettieae*) by GEESINK, *Desmodieae* by OHASHI, *Dalbergia* and *Ormosia* by Niyomdham, and various genera by Nguyen Van Thuan.

VIJAY KUMAR and others have completed studies of cavitated trichomes in *Indigofera*, and taxonomic significance of trichomes in selected *Indigofera* spp.

VIRASORO can supply a list of the legume specimens deposited in (MFA).

WOODS (new Reader) is revising *Apios* and *Cochlianthus* under the direction of MOHLENBROCK.

ZARUCCHI noted that the New World Legume Database may be incorporated in BISBY's International Legume Database.

ZINDLER-FRANK is preparing a review of the occurrence of calcium oxalate in legumes and welcomes reprints on this subject. Offers seeds of *Rhynchosia caribaea* and *R. phaseoloides*.

RECENT LEGUME LITERATURE

[Ed. Note: Author names in all capital letters are Bean Bag readers. Their full names and addresses are the May 1985 Directory. Correspondence about articles should be sent to them.]

Andrews, M., J.M. Sutherland, R.J. Thomas, and SPRENT. 1984. Distribution of nitrate reductase activity in six legumes: The importance of the stem. *New Phytol.* 98: 301-310.

Arora, S.K. 1983. Chemistry and biochemistry of legumes. Edward Arnold, London, England. [359 pp., 7 pp. plates, illustrated.]

BARNEBY. 1984. *Dragna hippomanicum*. 10. New critical *Astragalus* spp. (*Leguminosae*) from Nevada USA with the addition of 1 Peruvian species. *Brittonia* 36(2): 167-173.

BARNEBY. 1984. A new Bolivian *Mimosa* of section *Habbasia* series *Leptostachya* (*Leguminosae*, *Mimosoideae*): Close kin of the fictitious genus *Shranckiastrum*. *Brittonia* 36(3): 248-251.

Batia Pazy. 1984. Insect induced self-pollination (*Lupinus*). *Plant Syst. Evol.* 144: 315-320.

BAWA and C.J. Webb. 1984. Flower, fruit and seed abortion in tropical forest trees: Implications for the evolution of paternal and maternal reproductive legume patterns. *Amer. Jour. Bot.* 71(5): 736-751. [Legumes were studied.]

Bielenberg, W., H. Esterbauer, M. Hayn, and K. Umrath. 1984. Excitatory substances of Mimosaceae. *Phyton (Horn)* 24(1): 1-10.

BIRCH, SOUTHGATE, & FELLOWS. 1985. Wild and semi-cultivated legumes as potential sources of resistance to bruchid beetles for crop breeders: A study of *Vigna* and *Phaseolus*. In G. Wickens, ed. *Plants for arid lands*. Allen & Unwin, London.

BIRCH and Wratten, S.D. 1984. Patterns of aphid resistance in the genus *Vicia*. *Ann. Appl. Biol.* 104: 327-338.

BRENAN. 1984. New record and new taxon in *Pseudoprosopis* (Leguminosae) of Africa. *Kew Bull.* 39(3): 657-658.

Cialdella, A. M. 1984. The genus *Acacia* (Leguminosae) in Argentina. *Darwiniana* 25(1-4): 59-112.

Crisp, M. D. 1984. Notes on *Daviesia* and *Jacksonia* (Leguminosae: Papilionoideae) for the flora of the Perth region Australia. *Nuytsia* 5(1): 159-170.

de Kort, I. and G. Thussa. 1984. A revision of the genus *Indigofera* (Leguminosae: Papilionoideae) in Southeast Asia. *Blumea* 30:89-151.

Faria, S.M. de et al. (including SPRENT). 1984. New nodulating legume trees from South-East Brazil. *New Phytol.* 98:317-328.

FERGUSON. 1984. Pollen morphology and biosystematics of the subfamily Papilionoideae (Leguminosae). In GRANT cited below.

FERGUSON. 1985. Pollen morphology of Moringaceae. *Kew Bull.* 40: 25-34. [Some regard this family as a close relative of subfamily Caesalpinioideae.]

FORERO, and A.H. Gentry. 1984. New phanerogam species from Choco, Colombia. *Phytologia* 55(6): 365-371. [Including *Pithecellobium longipendulum*.]

Freire, S. F. 1984. Leaf anatomy of the Argentine species of the tribe Sophoreae except *Adesmia* (Leguminosae, Papilionoideae). *Darwiniana* 25:123-142.

Gapochka, G. P. 1984. Taxonomic position of genus *Cicer* according to palynomorphological data. *Vestn. Mosk. Univ. Ser. 14. Biol.* 0(1): 18-24.

GEESINK. 1984. *Scala millittiearum*. Leiden Botanical Series 8: 1-131. [Illustrated, keyed monograph of tribe Millettieae nee Tephrosieae. Gld. 56]

GILL and S.W.H. Husani. 1984. Cytomorphology of the genus *Millettia* (Leguminosae) from Nigeria. *Bol. Soc. Brot. Ser. 2*, 57: 237-249.

GILL, G.O. Alabanji and S.W.H. Husani. 1984. On the nature of ergastic substances in some Nigerian leguminous seeds. *Feddes Repertorium* 95: 659-663.

Gorbunova, N. 1984. Taxonomy of Genus *Caragana* Lam. (Fabaceae). Akad. Nauk SSSR, Bot. Inst. 21: 92-101.

GRANT editor. 1984. Plant Biosystematics. Academic Press Canada, 55 Barber Greene Road, Don Mills, Ontario M3C 2A1 Canada. [684 pp. US \$49.50. See especially chapter by FERGUSON on pollen morphology and biosystematics.]

GUNN. 1984 (Printed March 1985). Fruits and seeds of genera in the subfamily Mimosoideae (Fabaceae). U. S. Dept. Agr. Tech. Bull. 1681. [194 pp., keys, full page illustrations using drawings, photos and micrographs. All Bean Bag Readers will receive a copy with the May 1985 Bean Bag.]

GUINET AND M. Bessedik. 1984. Presence du genre *Prosopis* (Leguminosae, Mimosoideae) a l'aquitantien Basal dans l'aude (Languedoc, France). Pollen et Spores 26: 101-108.

Hebblethwaite, P. D. et al., eds. *Vicia faba*: agronomy, physiology, and breeding. World Crops 10. Nijhoff/Junk [333 pp. \$54.50].

ISELY. 1984. *Astragalus* L. (Leguminosae: Papilionoideae) II. Species summary A-E. Iowa State Journal of Research office, 45 Kildee Hall, ISU, Ames, Iowa 50011 USA. [Price US \$4.00. The first part (keys to species of U.S. *Astragalus*) published in 1982 also is available for \$4.00.]

Hoc, P.S. 1984. Genus *Cathormion* (Leguminosae, Mimosoideae) in Argentina: Pollen study. Darwiniana 25: 163-170.

KEIGHERY. 1984. Pollination of *Jansonia formosa* Kipp. ex Lindl. (Papilionaceae). West. Aust. Naturalist 16:21.

KINGSOLVER. 1983. A review of the genus *Sculobrichus* Kingsolver (Coleoptera: Bruchidae) with descriptions of four new species, and new synonymy. Proc. Entomol. Soc. Wash. 85(3): 513-527. [Members of this genus breed exclusively in *Prosopis* seeds in South America.]

KINGSOLVER. 1984. *Acanthoscelides winderi* new species of Coleoptera Bruchidae associated with *Mimosa* spp. from Brazil (Leguminosae, Mimosoideae). Entomol. News 95(3): 87-89.

KINGSOLVER. 1984. The Bruchidae associated with seeds of *Parkia* (Leguminosae, Mimosoideae) in northern South America, with descriptions of new species in *Acanthoscelides* and *Mimosestes* (Coleoptera). Entomography 3: 43-73.

Ladizinsky, G., D. Braun, D. Goshen, F.J. Muehlbauer. 1984. Biological species of the genus *Lens*. Bot. Gaz. 145(2): 253-261.

Loureiro, A.A., F J.D. Vasconcellos, J.A.D. Freitas. 1983. Contribution of the anatomical study of 5 spp. of *Sclerolobium* and *Tachigalia* (Leguminosae) of Amazonica. Acta Amazonica 13(1): 149-170.

MISSET and J. P. Gourrett. 1984. Accumulation of smooth cisternae in tapetal cells of *Ulex europaeus* L. Jour. Cell Sci. 72: 64-74.

Mondal, M.S. and M. 1983. Pollen morphological studies of some indigenous floral drugs of India (Leguminosae). Jour. Econ Taxon. Bot. 4(2): 517-524.

- National Research Council. 1984. *Leucaena*: Promising forage and tree crop for the tropics. Edition 2. 100 pp. National Academy Press, 2101 Constitution Ave. Washington, D.C. 20418, USA. [Free while supply lasts.]
- NOZZOLILLO. 1985. Seedling morphology and anatomy of *Cicer* spp.: A comparison of 8 species representing all 4 sections of the genus. *Can. Jour. Bot.* 62:1-6
- OHASHI. 1984. Intraspecific taxa of *Desmodium microphyllum* (Leguminosae). *Jour. Japan. Bot.* 59(2): 42-47.
- Oliveira, M.L.A.A. 1983. Taxonomic study of the genus *Desmodium* (Leguminosae, Faboideae, Desmodieae). *Theringia Ser. Bot.* (31): 23-65. [14 spp.]
- PALACIOS and BRAVO. 1984. On some Argentine species of *Prosopis*. *Bull. Groupe Int. Etude Mimos.* No. 12:203-112.
- Pillai, A. and K.C. Sharma. 1984. The stem-node continuum in some Mimosoideae. *Acta Bot. Indica* 12(1):9-14.
- Sanjappa, M. and R. P. Bhatt. 1984. Further studies on karyomorphology of the genus *Indigofera* (Fabaceae, Papilionoideae). *Cytologia (Tokyo)* 49(1): 117-126.
- STANKEVICH. 1982. Taxonomic position of some sections of genus *Vicia* L. *Tr. Prikl. Bot. Genet. Sel.* 72(1):21-28.
- STIRTON. 1984. A new species of *Argyrobium* (Fabaceae) from the southern Cape. *Jour. S. Afr. Bot.* 50(4): 443-448.
- STIRTON. 1984. Name changes in *Psoralea* (Fabaceae). *Jour. S. Afr. Bot.* 50(4): 461-462.
- STUDART DA FONSECA VAZ. 1984. *Bauhinia grazieliae* (Leguminosae: Caesalpinoideae) especie nova de norte do Espirito Santo. *ATAS da Soc. Bot. Brazil* 2(9): 73-76.
- Silvertown, J.W. 1984. Phenotypic variety in seed germination behavior: The ontogeny and evolution of somatic polymorphism in seeds. *Amer. Nat.* 124(1): 1-16. [Germination polymorphism is commonly found among seeds in bulked samples.]
- SPRENT and R.J. Thomas. 1984. Nitrogen nutrition of seedling grain legumes: Some taxonomic, morphological and physiological constraints. *Plant, Cell & Envir.* 7:637-645.
- STRITCH. 1984. Nomenclatural contributions to a revision of the genus *Wisteria*. *Phytologia* 56: 183-184.
- Sutherland, J.M. and SPRENT. 1984. Calcium oxalate crystals and crystal cells in determinate root nodules of legumes. *Planta* 161:193-200.
- Sytin, A. 1984. Revision of the Caucasian Species of *Astragalus* L. (Fabaceae) Section *Onobrychium* Bunge. *Akad. Nauk SSSR, Bot. Inst.* 21: 101-112.

- TINDALE. 1984. Two New Eastern Australian species of *Glycine* Willd. (Fabaceae). *Brunonia* 7: 207-213, fig. 1-2.
- TUCKER. 1984. Origin of symmetry in flowers. In R.A. White and W.C. Dickson eds., Contemporary problems in plant anatomy. Pp. 351-395. Academic Press. [Floral development in species of *Amorpha*, *Bauhinia*, *Cadia*, *Caesalpinia*, *Calliandra*, *Lupinus*, *Mimosa*, *Parkinsonia*, and *Sophora*.]
- TUCKER. 1984. Unidirectional organ initiation in leguminous flowers. *Amer. Jour. Bot.* 71: 1139-1148. [*Lupinus*, *Genista*, *Bauhinia*.]
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